

ASME SECTION IX MATERIAL GROUPING P-NUMBERS

1.0 P-NUMBERS

ASME Section IX has assigned P-Numbers for base materials used under the ASME Code to reduce the number of required welding and brazing procedure qualifications (see ASME Section IX Table QW/QB-422 and Appendix D). For ferrous base materials that have specified impact test requirements, Group Numbers have also been assigned within P-Numbers. These assignments are based on comparable base material characteristics, such as composition, weldability, brazeability, and mechanical properties. These assignments do not mean that base materials may be substituted for a base material that was used in the qualification test without consideration of compatibility from a standpoint of metallurgical properties, post weld heat treatment, design, mechanical properties, and service requirements. Where notch toughness is a factor, it is considered that the base materials meet the specific requirements.

The structure of P-Number assignments is based on the following:

Base Material	Welding	Brazing
Steel and steel alloys	P No.1 through P No. 11, including P No. 5A, 5B, and 5C	P No. 101 through P No. 103
Aluminum and aluminum-based alloys	P No. 21 through P No. 25	P No. 104 and P No. 105
Copper and copper-based alloys	P No. 31 through P No. 35	P No. 107 and P No. 108
Nickel and nickel-based alloys	P No. 41 through P No. 47	P No. 110 through P No. 112
Titanium and titanium-based alloys	P No. 51 through P No. 53	P No. 115
Zirconium and zirconium-based alloys	P No. 61 and P No. 62	P No. 117

2.0 MATERIAL GROUPINGS

The tables in ASME Section IX material groupings for use with LANL Welding Procedures and Welding Technique Sheets under the following fabrication / construction codes:

- ASME Section I
- ASME Section III
- ASME Section VIII
- ASME B31.1
- ASME B31.3
- ASME B31.8
- ASME B31.9
- AWWA

For construction to the above codes, any use of base materials listed in ASME Section IX, Table QW/QB-422, which is not included in this section, shall be referred to LANL Engineering prior to welding.